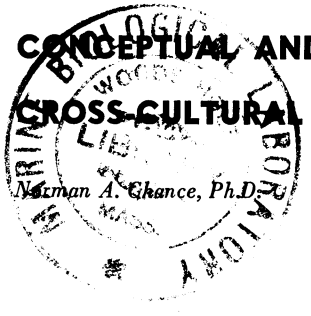
Can a health survey questionnaire such as the Cornell Medical Index be used in a culture which varies considerably from that in which it was originally devised? The experience with an Eskimo group presented in this paper has important implications both for those who work in American communities as well as for those who may work in other countries, developed and developing.



CONCEPTUAL AND METHODOLOGICAL PROBLEMS IN CROSS-CULTURAL HEALTH RESEARCH

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WHAT are the problems of adapting a survey instrument developed in the United States for use in another cultural setting? The following discussion explores the difficulties encountered when the Cornell Medical Index health questionnaire was revised and administered to the members of a different culture—a small isolated group of Alaskan Eskimos living along the Arctic Coast.

During the past 100 years, Eskimos living in northern Alaska have had numerous contacts with the outside world. The arrival of whalers in the 1850's, followed by traders, missionaries, school teachers, doctors, nurses, military personnel, and many others, have all contributed to the Eskimos' growing awareness of western technology and culture. For many years, the changes brought about by this knowledge were relatively slow, resulting in gradual modification of the traditional native culture. This was largely due to the newcomers having to adapt their way of life to that of the Eskimo.[1] In the early contact period, the problems of adjustment were more the concern of the former than the latter.

Recently, however, this picture has undergone an almost complete reversal. Today the majority of these Eskimos tend to identify themselves much more with North American culture, discarding in the process much of their own ethnic heritage. What does this decision mean for the future of the Alaskan Eskimos? Are the newly acquired goals capable of realization, or will they eventually lead to frustration, conflict, individual and group disorganization? In an attempt to gather specific information on these and similar questions, the author has begun a long-term study of the small isolated village of Kaktovik, Alaska. This settlement of a little over a hundred Eskimos is located along the Arctic Coast near the Alaskan-Canadian border.*

* While most of the Eskimos now living at Kaktovik grew up in this part of Alaska, they did not come together to form a permanent village settlement until the middle and late 1940's. Only after the Coast and Geodetic Survey and the military began hiring local Eskimos for unskilled construction and surveying work did Kaktovik take on any semblance of a real village. Even this picture was drastically changed in 1953 and 1954 when construction work began on a nearby DEW Line radar installation. At

One of the major goals of the study is to develop a health survey instrument that can provide a broad picture of the physical and mental health of this Eskimo group. Following discussions with epidemiologists, survey researchers, and anthropologists familiar with problems of cross-cultural health research, the Cornell Medical Index (CMI) was chosen as the main instrument to try out in the village. The CMI is composed of 195 questions and was originally devised to collect a large body of pertinent medical and psychiatric data from American patients in a minimal amount of time.*

Once the questionnaire had been chosen, three basic problems common to all cross-cultural health studies had to be resolved: (1) To what extent were Eskimo "concepts" of health and disease similar to those of American culture; (2) if the concepts were similar, could the "terminology" of the questionnaire be revised so as to secure reliable and valid responses from Eskimos and still retain comparability between Eskimo and United States responses; and (3) by what "method" could the data be most objectively obtained?

Conceptual Similarity

Eskimos, like all other peoples of the world, have a definite set of subjective attitudes and beliefs relating to health and illness. How the illness is defined, what can be done about it, who can be called, what can be hoped for—answers to all these questions are contained within the fabric of culture. North Alaskan Eskimos traditionally saw illness resulting from one of two major causes: the loss of one's soul or the intrusion of a foreign object. A person's soul could wander away during one's sleep, could be taken away by a malevolent shaman, or could leave because the individual failed to follow certain restrictions placed on him by a shaman or the culture. Illness caused by intrusion was usually the work of a hostile shaman, but in either case an effective cure for a serious illness could only be achieved through the services of a competent native curer.[2]

Today, this traditional belief has been rejected in favor of the skills of the public health doctor and nurse. In a study of four Alaskan hospitals for native peoples made in 1953, it was found that during one month there were an average of 94 outpatient hospital visits for every 100 Eskimos living in nearby villages. These visits were made by 33 per cent of the total village population. A second study made in 1954 showed strikingly similar statistics.† Shamanism, on the other hand, is rarely practiced in northern Alaska. In the

this time there were not enough local Eskimos to fill the new positions and a number of families moved to the village from as far away as Barrow and Aklavik. In 1957, major construction work on the DEW Line was completed, but extensive maintenance is still required and may be expected to continue indefinitely. Today, approximately 75 per cent of the Kaktovik Eskimo men earn relatively permanent full-time salaries on the DEW Line. For a detailed discussion of the rapid social and cultural changes taking place in the village, see: Chance, Norman A. Cultural Change and Integration: An Eskimo Example. Am. Anthrop. 62,6:1028–1044 (Dec.), 1960.

* See Brodman, K.; Erdmann, A. J. Jr.; and Wolff, H. G. Cornell Medical Index Questionnaire Manual (Rev. 1956), New York, N. Y.: Cornell University Medical College, 1956. The revised version of the questionnaire used in the study had a total of 158 questions. The other 37 were deleted as not being pertinent to the Eskimo or unanswerable due to lack of knowledge, e.g., questions on jaundice, gall bladder, etc. All 50 questions on the "Moods and Feelings" section of the questionnaire were used in the final version.

† The magnitude of this rate can be seen when compared with that of Pittsburgh, Pa., where only 28 visits per 100 persons were made to physicians and clinics or received from physicians during a month in 1952. See Alaska's Health: A Survey Report. University of Pittsburgh Graduate School of Public Health, 1954, Section III, 8:9, for a more detailed discussion of these figures.

Eskimo village of Barrow, the largest in the arctic, the last shaman died in 1939.

This pattern is also quite evident in Kaktovik. A previous field study made in 1958 established that over 90 per cent of the adult villagers had had at least one contact with a physician and many had been to the U. S. Public Health Service hospital at Barrow for physical examinations, x-rays, childbirth, and the like. Further insight into modern medical beliefs and practices has been gained through contact with visiting public health nurses, DEW Line medical aids, and local school and adult health education training programs.

This shift in identification from traditional Eskimo disease-beliefs to those of western medicine has occurred throughout much of native Alaska. A major reason behind this new identification has to do with the fact that Alaskan Eskimos had almost no intellectual and professional medical system they had to unlearn. As Margaret Lantis states in her recent monograph on Eskimo folk-medicine in the Lower Kuskokwim River and Nunivak-Nelson Island areas of Alaska: "The new medicine—modern rational medicine, professionally administered—has been accepted remarkably well, especially in view of the Kuskokwim Eskimos' resentment against the Whites for bringing devastating new diseases. . . . There was neither an organized system of ideas as a basis for doctoring nor an organized profession of curers to oppose the new practitioners and their germ theory."[3]

This lack of a traditional medical system was even more pronounced among the North Alaskan Eskimos. In this area, particularly, emphasis has always been placed on keeping well rather than getting well. A pragmatic willingness to try new technics and an increasing recognition of the severity of village health problems (due in part to worsening sanitary conditions brought on by more permanent residence in villages) have further encouraged the acceptance of these new ideas. Given an increased familiarity, utilization, and acceptance of western medicine, plus an extensive knowledge of anatomy based on long experience with the slaughter of game animals, it was felt that many of the questions on the CMI dealing with physical health would be conceptually meaningful to the members of this Eskimo group.

Terminological Revision

Even assuming a basic conceptual similarity, there still remained the problem of revising the terminology of the original CMI questionnaire so that the words used to define the concepts would also have similar meanings. The rapidly growing literature on the subject of language and culture made it abundantly clear that this task was not an easy one.

Since an adequate revision could only be accomplished with the help of individuals who were both medically trained and familiar with Eskimo culture, interviews were arranged with an epidemiologist and with public and mental health specialists, all of whom had had extensive contact with Alaskan Eskimos. These included doctors and nurses affiliated with the Division of Indian Health, the Arctic Health Research Center of the U. S. Public Health Service, and the Alaska Department of Health and Welfare. Each went over the questionnaire in detail, making specific recommendations on the basis of their medical and personal experiences with Eskimos. A few questions were deleted as not being medically pertinent to the Eskimo environment. Others were revised to fit local idioms, e.g., "Is your nose continually stuffed up?" was changed to read: "Is your nose plugged very often?" The impairment questions were revised to fit behavioral differences. The original question: "When

you catch a cold, do you always have to go to bed?" was changed to "When you catch a cold, do you always have to take it easy?" since Eskimos rarely, if ever, go to bed with a cold.

Following these revisions, a brief pretest of the questionnaire was given in the large Eskimo village of Barrow. In this instance, Eskimos themselves were asked to comment on any questions they did not understand or about which they had any doubt. Words such as "swollen," "dizzy," "tremble," "paralyzed," "nervous," and "crippled" were discussed and analyzed for possible divergent meanings. Eskimos who had extensive contact with and knowledge of the English language were asked to translate the English connotations of these words into Eskimo. Where this could not be done easily, other words were substituted.

Even with this degree of care, mistakes were made. The question on the psychiatric phase of the questionnarie, "Do you have to be on guard even with your friends?" was revised to meet the idiomatic difficulty of the phrase "on guard." The final question given in the village read: "Do you have to be careful what you say even with your friends?" Seventy per cent of the Eskimos responded, "Yes!" On further probing it became evident that implicit in the question was the thought "so as not to hurt your friends' feelings," a very understandable assumption given the Eskimos' strong interest in encouraging positive interpersonal relations. While the question had to be discarded in the analysis, it at least served as an important reminder of the care with which questions have to be phrased in a cross-cultural health survey.

Methodology

After the pretest and final terminological revision had been completed, arrangements were made to administer the questionnaire to as many of the adult Kaktovik Eskimos over the age of 17 as possible. The CMI was originally designed so that the respondent could read and answer the questions himself. However, the minimal knowledge of English and lack of experience in reading phonetic Eskimo precluded the use of this method in this instance. On the recommendation of the local village leaders, two young Eskimo men and one woman were hired as survey interviewers. They were chosen on the basis of: (1) their excellent knowledge of English; (2) their motivation to help in the survey; (3) their acceptance by others in the community; and (4) their knowledge of western medicine (two of the three had been patients in U. S. Public Health Service hospitals). Several meetings were held in which each question was discussed in English and then translated into Eskimo. The local Eskimo school teacher also participated in these meetings and served as an adviser on problems of translation.

At the same time, two brief talks were given to members of the entire village. These talks emphasized the value of having a thorough understanding of the total health needs of the community and the contribution the study would make to public health personnel and others interested in organizing better medical care programs for Eskimos. Several questions on the CMI were also read to the audience in an attempt to forestall possible feelings of anxiety that might be encountered during the actual survey. Translations of the talks were made by two of the village leaders, thereby showing their support for the proposed investigation.

The survey itself was completed in approximately three weeks. The interviewers reported little hostility to the rather lengthy series of questions and most interviews were completed within a half to three-quarters of an hour. Each respondent was interviewed by a

Table 1—Percentage of Eskimos Wanting Help in Decision-Making by Sex

Wanting Help	Percentage of Women Giving Response	Percentage of Men Giving Response
"Yes"	82	10
"No"	18	90
Total	100	100

member of his or her own sex in as much privacy as possible. At the conclusion of the survey, the interviewers were again brought together for a summary evaluation. The general consensus was that the questions had been phrased in such a way as to be meaningful to the respondents and answers were given sincerely. Only one family, a source of conflict in the village for many years, refused to participate in the survey. All other respondents appeared to be quite interested in the study, in several instances asking when they could be interviewed.

Following the completion of the survey, the results were briefly compared with some of the medical records of the sample population at the native hospital at Barrow. The preliminary findings suggested that this instrument could be used profitably in a nonwestern cultural setting. However, there were a few instances where cultural factors strongly influenced Eskimo responses to the questionnaire items. At this point previous anthropological knowledge became a vital adjunct to valid interpretation.

Cultural Factors in Questionnaire Responses

Although most of the health questions on the CMI were found to be conceptually meaningful to the Kaktovik Eskimos, it was equally important to discern the other cultural factors impinging on this initial conceptual outlook. The earlier field study, for example, showed that the major value placed on self-reliance colored an Eskimo's attitude toward physical illness so that only with the greatest reluctance would the individual be willing temporarily to pass on some of his daily responsibilities to another. An Eskimo with an illness considered quite debilitating in western society would be much more likely to continue his or her round of work without complaint. This acceptance of illness as a normal part of the life cycle has its roots in the traditional culture pattern where attitudes of fatalism, patience, and endurance were basic to the process of survival. As a result, positive Eskimo responses to the CMI questions dealing with symptoms of impairment, e.g., "Does sickness often keep you from doing your work?," were expected to be more meaningful than similar responses given by members of North American culture.

A different sort of cultural influence, not perceived until after the questionnaire had been given, was observed in women's responses to a question dealing with difficulty in decision-making. Positive answers to the (revised) question: "Do you always feel like you need someone to help you make up your mind?" were originally designed to provide an index of feelings of inadequacy. Instead, they simply reflected the cultural fact that women are expected to take a passive role in Eskimo society. A decisive woman, i.e., one who frequently takes action without consulting others, is more likely to be considered deviant than adequate.

A positive response to this question by an Eskimo man, however, did signify a deviant attitude since men are expected to play dominant roles in the decision-making process. The total percentage of responses to the above question based on a 91 per cent sample of all Eskimo adults over the age of 17 ($n=51$) is shown in Table 1.

Viewing these responses within the context of Eskimo culture, it can be seen that the large majority of Kaktovik Eskimos clearly perceive their expected roles. While the question had to be discarded as an index of women's feelings of inadequacy, it did provide additional insight into the process of role-playing.*

Further analysis of the health questionnaire shed light on one additional problem of culturally induced responses. A well known characteristic of the Eskimo value system is the strong emphasis placed on self-reliance. Given the severity of the arctic environment and the limited food supply, this value has always had an important integrative function—the ability to take care of one-self serving as a necessary prerequisite for survival. As a result, expressions of anxiety which might reflect a lack of self-reliance are repressed. The comment, "I was very worried," is a confession made only to close friends and is frequently followed by the qualifying phrase, "But I didn't show it."†

On this basis, it was predicted that most Kaktovik Eskimos would not acknowledge symptoms of anxiety asked for on the questionnaire. As it turned out, the 51 respondents gave a total of only nine "Yes" answers (out of a possible 459) to the nine anxiety symptom questions.‡ Some insight into the effect of Eskimo cultural attitudes on these answers can be seen by comparing them with the entire section of the CMI dealing with "Moods and Feelings." Using three or more "Yes" answers as a criterion of significant symptomatology, Table 2 lists the number and percentage of Eskimo responses by sex.

Since this article is primarily concerned with a discussion of conceptual and methodological problems involved

* Other less culturally influenced responses bearing on feelings of inadequacy did indicate, however, that symptoms of this sort were present in over 60 per cent of the Eskimo women. See discussion following Table 2.

† For a brief discussion of Eskimo repression of anxiety in a hospital ward, see Lantis, Margaret, and Hadaway, Evelyn B. How Three Seattle Tuberculosis Hospitals Have Met the Needs of Their Eskimo Patients. Paper presented at the Nursing Session of the National Tuberculosis Association, Kansas City, Mo., May 7, 1957 (mimeo.).

‡ These are questions 163 through 171 on the original CMI questionnaire. As an example, two slightly reworded questions used in the Kaktovik study were: "Do you worry all the time?" and "Do even little things make you nervous and tired?"

Table 2—Number and Percentage of Eskimos Indicating Three or More Symptoms of Emotional Disturbance on the "Moods and Feelings" Section of the CMI by Sex*

"Moods and Feelings" Section	Number of Questions	Three or More Symptoms			Percentage of Total Indicating Symptoms
		Men	Women	Total	
M Inadequacy	9	1	14	15	30
N Depression	6	0	2	2	4
O Anxiety	9	0	0	0	0
P Sensitivity	6	1	3	4	8
Q Anger	8	2	3	5	10
R Tension	9	3	10	13	25

* Three questions were discarded due to culturally biased Eskimo responses.

in giving a cross-cultural health survey rather than in presenting the actual research findings, no attempt will be made at this time to analyze the whole table in detail. It is important, however, to determine whether these Eskimos did in fact feel anxiety which is not reflected in the above table.

The previous field study had indicated that a large majority of these Eskimos were making a very positive adjustment to the rapid and extensive changes taking place in the village.[4] If this is the case, we would expect to find these people relatively free of anxiety symptoms. At the same time, it was also noted that many of the middle-aged and older Eskimo women had had less contact with North Americans and the outside world and were, therefore, undergoing slower and less extensive acculturation than Eskimo men. Furthermore, some of their traditional mechanisms for gaining prestige and contributing to family support, e.g., skin-sewing, had diminished in importance without adequate replacement. Continuing field work (1960) had shown this acculturational gap to be steadily widening. It is just this sort of situation that leads to strong feelings of inadequacy—a fact borne out by Table 2. Fourteen of the 22 adult women in the village expressed similar symptoms. In North American culture, feelings of inadequacy would also lead to expressions of anxiety, but due to the Eskimo's culturally approved repression of such symptoms, they did not show up in the questionnaire results.

We can even go one step further. If feelings of inadequacy lead to anxiety which in turn is repressed, we would expect some of this anxiety to be inverted and appear as inner tension. Again, looking at the table, we find that 10 out of the 13 Eskimos who expressed three or more symptoms of tension were women, a factor of 76 per cent. While the total picture is hardly this simple, the data do suggest that any evaluation of Eskimo symptomatology related to anxiety must take into account the culturally induced repression of these feelings.*

Conclusion

The large majority of questions dealing with such topics as ears, eyes, teeth, respiratory system, gastrointestinal system, nervous system, and other physical symptoms were felt to be conceptually understandable, although cultural factors did influence judgments pertaining to degree of impairment. The degree of conceptual equivalence was greatly aided by the Eskimos' steadily increasing awareness and endorsement of the concepts of health and disease as practiced by modern North American physicians and nurses. In the predominantly psychiatric section of the questionnaire, Eskimo cultural attitudes directly influenced responses to questions dealing with anxiety symptoms and the decision-making process.

In each of these three areas the revision of the questionnaire failed to take into account the original bias of the questionnaire items toward the culture of origin, and the cultural interpretation of the items by the subjects to which the questionnaire was adapted. In other words, Eskimo attitudes pertaining to physical impairment, expression of anxiety, and the decision-making process among women were sufficiently distinct from North American cultural attitudes on the same topics to

* Certainly, the repression of aggression, also an important part of the Eskimo personality system, is another factor in the production of tension. See Lantis, Margaret. Alaskan Eskimo Cultural Values. Polar Notes, Dartmouth College Library, No. 1: 35–48 (Nov.), 1959. In a separate study of Eskimo psychopathology, Jane Hughes also found a higher symptom rate among St. Lawrence Eskimo women. See Hughes, Jane. An Epidemiological Study of Psychopathology in an Eskimo Village. Unpublished Ph.D. Dissertation, Cornell University, 1960.

invalidate any possible correlation between the two groups. While the high degree of conceptual equivalence in most areas of the questionnaire warranted a continuation of the investigation, the preliminary study clearly illustrated the fact that before a foreign health survey instrument can be used comparatively, one must first have a detailed understanding of the attitudes of the group in question and the cultural matrix to which these attitudes relate; and second, one must provide appropriate translation not only of the instrument's terminology, but its conceptual underpinning as well. Unless these two cautions are kept clearly in mind, the validity of any cross-cultural study of health and disease may be strongly questioned.

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